COVER SHEET

Responsible Agency: United States Department of Energy

Title: Draft Environmental Impact Statement for the Treatment and Management of Sodium-Bonded Spent Nuclear Fuel

Locations: Idaho, South Carolina

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Abstract: The Department of Energy (DOE) is responsible for the safe and efficient management of several different types of spent nuclear fuel. One type of spent nuclear fuel that may not be suitable for disposal in a geologic repository without treatment is the DOE-owned sodium-bonded spent nuclear fuel. Sodium-bonded spent nuclear fuel contains metallic sodium, a highly reactive material; metallic uranium, which is also reactive; and in some cases, highly enriched uranium. The presence of reactive material could complicate the process of qualifying and licensing such spent nuclear fuel for disposal in a geologic repository. Currently, more than 98 percent of DOE's sodium-bonded spent nuclear fuel is located at the Idaho National Engineering and Environmental Laboratory (INEEL). In a 1995 agreement with the State of Idaho, DOE committed to remove all spent nuclear fuel from Idaho by 2035.

Several technologies for spent nuclear fuel treatment are under development and might facilitate qualification and licensing for ultimate disposal. The most developed technology is the electrometallurgical treatment of sodium-bonded spent nuclear fuel at Argonne National Laboratory-West (ANL-W). This EIS evaluates the potential environmental impacts associated with the treatment of sodium-bonded spent nuclear fuel in one or more spent nuclear fuel management facilities: ANL-W at INEEL (near Idaho Falls, Idaho) and either the F-Canyon or Building 105-L at the Savannah River Site (near Aiken, South Carolina). The EIS analyzes under the proposed action the electrometallurgical process, the plutonium-uranium extraction (PUREX) process, direct disposal in high-integrity cans with the sodium removed, and the melt and dilute process. The EIS also evaluates the continued storage of sodium-bonded spent nuclear fuel and direct disposal without treatment under the No Action Alternative.

Public Comments: In preparing this Draft EIS, DOE considered comments received from the public during the scoping process (February 22, 1999 to April 8, 1999). Comments on this Draft EIS may be submitted during the 45-day comment period. Public meetings on this EIS will also be held during the comment period. The dates, times, and locations of these meetings will be announced shortly after issuance of this Draft EIS.